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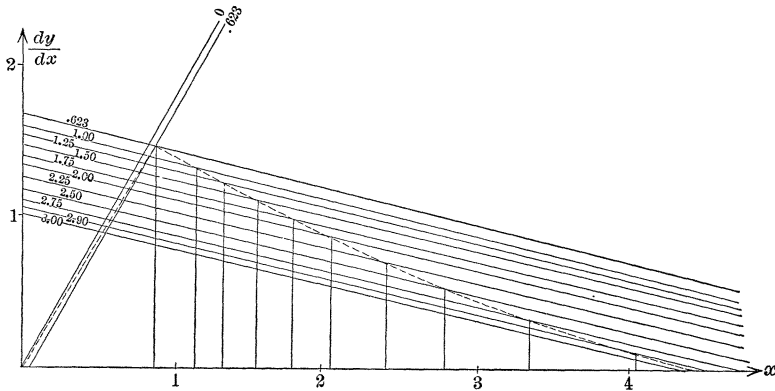


FIG. 3.

y will be a maximum when $dy/dx = 0$. This value is 2.926 and the corresponding value of x is 4.492. The values chosen for y are indicated on the figure. It is seen that when $x = \frac{29}{34}$, $y = .623$. This value must, therefore, be used in both differential equations.

The method was applied to the problem given in Kutta's article, above referred to, for comparing the five different approximations. With squared paper ruled to twentieths of an inch and using two inches as the unit, the approximation was closer than that of any one of the first four but not quite so close as Kutta's, while the work necessary to obtain the result was much less.

In a later paper it is proposed to extend the method to the solution of the differential equation of the second order.

BOOK REVIEWS.

W. H. BUSSEY, CHAIRMAN OF THE COMMITTEE.

Practical Mathematics. By CLAUDE IRWIN PALMER, Assistant Professor of Mathematics in the Armour Institute of Technology. The McGraw-Hill Book Company, New York, 1913. Four volumes. \$0.75 each.

We have here in four small, neatly bound and clean cut volumes a very interesting presentation of elementary mathematical subjects from Arithmetic through Trigonometry. The work has been prepared for persons of maturity, being, as stated by the author, the outgrowth of a course in practical mathematics given in the evening classes of the Armour Institute of Technology.

The titles of the four little volumes are:

Part I. Arithmetic with Applications (150 pages).

Part II. Geometry with Applications (166 pages).

Part III. Algebra with Applications (189 pages).

BOOK REVIEWS.

Part IV. Trigonometry and Logarithms (160 pages).

These volumes are admirably adapted to meet the needs of the persons to whom they are addressed. The treatment throughout is simple and concise; demonstrations are largely avoided; and the whole work abounds in interesting practical exercises drawn from a large variety of sources. These exercises serve to make the books of great value to all teachers of elementary mathematics as a source of fresh and instructive problems.

W. C. BRENKE.

Computing Tables and Mathematical Formulas, arranged for the use of high schools and colleges. By E. H. BARKER. Ginn and Company, Boston, 1913. Narrow 12 mo, semi-flexible cloth, v+88 pages. \$0.75.

This admirable little book of tables, 4 inches by 7 inches, contains a wealth of information which furnishes material for many problems of ordinary computation besides being very convenient for problems involving logarithms. Fifteen tables present the ordinary trigonometric functions and logarithms as well as powers (squares and cubes), roots, circumferences, areas, for the numbers from 1 to 1,000, trigonometric formulas, volumes of spheres (1 to 100 in diameter), standard gauges, decimal equivalents of 32ds and 64ths, specific gravities, weight of a cubic foot of various materials, and convenient equivalents. Any high school pupil, and even the ordinary college student, would profit by having such a book placed in his hands. The objection to the work from this point of view, however, is the price. Compare this book of 88 pages at 75 cents with the *Vierstellige Tafeln* by Schubert-Haussner at 22 cents. The German work is in two colors and consists of 175 pages, being volume 81 of the well-known *Sammlung Götschen*, G. J. Götschen'sche Verlagshandlung, Berlin W. 10, Genthiner-Strasse 38. Under the new tariff law teachers will be able to import such works free of duty for their students and until similar tables are published at a more moderate price in this country the German tables are to be preferred. Aside from the price, even, it is highly desirable that our high school students should occasionally see and handle foreign books.

L. C. KARPINSKI.

An Introduction to Mathematics. By A. N. WHITEHEAD. Henry Holt and Co., New York, 1911. 256 pages. \$0.75.

Working mathematicians have usually not taken the time and trouble to render their point of view, the nature of their subjects of interest, and their methods intelligible to a layman. This state of things has no doubt been brought about by a feeling widely prevalent that the layman, even though intelligent, is not able to understand these things without first passing through a considerable course of training. So far as results and details of work are concerned this feeling is certainly justified.

But it is at least open to question whether the really fundamental ideas, stripped of all technicality in verbiage and results, are not after all of such simple